

# **Summary of Wastewater Treatment Systems**

**Kentucky River ADD Planning Area**

**September, 2001**

## KENTUCKY RIVER ADD PLANNING AREA

381 Perry County Park Road

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DRAFT

### Sewer Service in the planning area

- Estimated 1999 population of 125,000--18% on public sewer
- Estimated 2020 population of 127,000--31% on public sewer
- Proposed projects would connect about 5,700 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$31,700,000
- Estimated funding needs for public sewer 2006-2020--\$70,000,000

The Kentucky River Area Development District region had an estimated population of 124,770 (47,819 households) in 1999 with a projected population of 127,000 (54,000 households) in 2020. Public sewer systems serve 23,000 area residents, or 18 percent of the population. Proposed sewer line extensions for the period 2000-2020 would provide service to an additional 5,700 households. About 102,000 people in the region currently rely on onsite treatment systems.

Estimated populations and public sewer service for the eight counties in the region is given below:

| County        | 1999 Pop | On Public    | 2020 Pop | On Public    |
|---------------|----------|--------------|----------|--------------|
| Breathitt     | 15,600   | 3,400 (22%)  | 16,800   | 4,200 (25%)  |
| Knott         | 17,500   | 875 ( 5%)    | 17,300   | 1,700 (10%)  |
| Lee           | 7,900    | 800 (10%)    | 8,200    | 1,600 (20%)  |
| Leslie        | 13,400   | 400 ( 3%)    | 12,800   | 1,300 (10%)  |
| Letcher       | 26,500   | 6,100 (23%)  | 25,800   | 12,900 (50%) |
| Owsley        | 5,300    | 800 (15%)    | 5,600    | 1,400 (25%)  |
| Perry         | 31,100   | 9,300 (30%)  | 32,100   | 14,400 (45%) |
| Wolfe         | 7,500    | 600 ( 8%)    | 8,750    | 1,800 (20%)  |
| Planning Area | 125,000  | 23,000 (18%) | 127,000  | 39,000 (31%) |

13 public sewer systems serve the planning area.

## **BREATHITT COUNTY**

### Sewer Service in Breathitt County

- Estimated 1999 population of 15,600--22% on public sewer
- Estimated 2020 population of 16,800--25% on public sewer
- Proposed projects would connect about 300 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$2,500,000
- Estimated funding needs for public sewer 2006-2020--\$0

Breathitt County had an estimated population of 15,563 (5,938 households) in 1999 with a projected population of 16,800 (7,200 households) in 2020. Public sewer is provided to about 22 percent of the county's residents. About 4,600 households in the county use on-site wastewater treatment. About 300 customers could be added to public sewer service through new line extensions in 2000-2020.

The City of Jackson owns the only treatment plant in the county. The plant has a design capacity of 750,000 gpd and is operating at about 40 percent of capacity. Effluent destination is the North Fork of the Kentucky River. Breathitt County is in the process of forming a countywide water and sewer district.

## **KNOTT COUNTY**

### Sewer Service in Knott County

- Estimated 1999 population of 17,500--5% on public sewer
- Estimated 2020 population of 17,300--10% on public sewer
- Proposed projects would connect about 200 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$2,000,000
- Estimated funding needs for public sewer 2006-2020--\$10,000,000

Knott County had an estimated population of 17,471 (6,587 households) in 1999 with a projected population of 17,300 (7,300 households) in 2020. Public sewer is provided to about 5 percent of the county's residents. About 6,200 households in the county use on-site wastewater treatment. About 200 customers could be added to public sewer service through new line extensions in 2000-2020.

The City of Hindman and the Caney Creek Water District in Pippa Passes own the only two treatment plants in the county. The county is in the process of expanding the Caney Creek Water District into a countywide entity. A feasibility study is currently being conducted on a treatment plant along Highway 550 near the Perry County line that could serve the prison in Knott County, along with several residents along the way and possibly pick up customers in Perry County as well.

### **HINDMAN WASTEWATER TREATMENT PLANT**

The Hindman Plant provides service to about 150 customers. It has a design capacity of 125,000 gpd and operates at about 70 percent of that capacity. Effluent destination is Troublesome Creek.

### **CANEY CREEK WATER DISTRICT**

The Caney Creek Water District provides service to about 125 customers. Their plant has a design capacity of 86,000 gpd and is operating at 70 percent capacity. Effluent destination is Caney Creek.

## LEE COUNTY

### Sewer Service in Lee County

- Estimated 1999 population of 7,900--10% on public sewer
- Estimated 2020 population of 8,200--20% on public sewer
- Estimated funding needs for public sewer 2000-2005--\$0
- Estimated funding needs for public sewer 2006-2020--\$500,000

Lee County had an estimated population of 7,935 (3,306 households) in 1999 with a projected population of 8,200 (3,600 households) in 2020. Public sewer is provided to about 10 percent of the households. About 3,000 households use on-site systems.

The City of Beattyville operates the only wastewater treatment facility in the county. The Beattyville Wastewater Treatment Plant has a design capacity of 750,000 gpd, and is currently operating at about 40 percent capacity. Effluent destination is the Kentucky River. Rates are \$10.25 for the first 2,000 gallons.

## **LESLIE COUNTY**

### Sewer Service in Leslie County

- Estimated 1999 population of 13,400--3% on public sewer
- Estimated 2020 population of 12,800--10% on public sewer
- Proposed projects would connect about 300 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$3,600,000
- Estimated funding needs for public sewer 2006-2020--\$2,000,000

Leslie County had an estimated population of 13,390 (4,900 households) in 1999 with a projected population of 12,800 (5,500 households) in 2020. Public sewer is provided to about 3 percent of the county's residents. About 4,700 households in the county use on-site treatment systems. About 300 customers could be added to public sewer service through new line extensions in 2000-2020.

The City of Hyden owns the only treatment plant in the county. The plant capacity is 50,000 gpd and is operating at or above capacity. Effluent destination is the South Fork of the Kentucky River.

## LETCHER COUNTY

### Sewer Service in Letcher County

- Estimated 1999 population of 26,500--23% on public sewer
- Estimated 2020 population of 25,800--50% on public sewer
- Proposed projects would connect about 2,700 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$13,700,000
- Estimated funding needs for public sewer 2006-2020--\$28,300,000

Letcher County had an estimated population of 26,479 (10,240 households) in 1999 with a projected population of 25,800 (11,300 households) in 2020. Public sewer is provided to about 23 percent of the county's residents. About 7,900 households treat wastewater on site. About 2,700 customers could be added to public sewer service through new line extensions in 2000-2020.

There are currently 3 service providers in the county, The Jenkins Sewer Plant, The Whitesburg Wastewater Treatment Plant, and the Fleming-Neon Sewer Plant. In 1998 Letcher County formed the Letcher County Water and Sewer District and should start construction on their first project in the Spring of 2000.

The two big problems facing the county are the number of straight pipes and failing septic systems. A lot of homes from the old coal camps are built on lots too small for traditional septic systems, and in many parts of the county the soil is unsuitable for proper percolation of septic fields.

Letcher County is taking action on these problems. Local municipalities are working with the County Water and Sewer District to extend services to areas that can be served by traditional means, while the Water and Sewer District is pursuing alternative methods of treatment such as individual peat and cluster systems for areas well outside current municipal boundaries. The District has located several areas that appear to be suitable for cluster systems, but no specific site for expansions are planned because they need to coincide with future water expansions. A long range solution that has been discussed is a large plant to be located in the Cowan area. Working in conjunction with the Neon plant, the entire Boone Fork and the headwaters of the North Fork of the Kentucky River would be served. Also, The Letcher County Fiscal Court recently passed a mandatory sewer ordinance.

### **FLEMING-NEON SEWER PLANT**

The Fleming –Neon Sewer Plant has a design capacity of 520,000 gpd and is currently operating only at about 30 percent of capacity. Effluent destination is Boone Fork. Current rate is \$8.30 for the first 2000 gallons and \$4.15 per 1000 gallons afterward. The system serves about 600 households.

### **WHITESBURG WASTEWATER TREATMENT PLANT**

The Whitesburg Plant has a design capacity of 300,000 gpd and is operating at about 85 percent of capacity. Effluent destination is the North Fork of the Kentucky River. The plant

employs 5 people. The system serves about 600 households. Upgrades to existing infrastructure found in the projects listing will also effect long range plans of the Letcher Water and Sewer District.

#### **JENKINS SEWER PLANT**

The Jenkins Plant has a capacity of 600,000gpd and is operating at 65-70 percent of capacity. Effluent destination is Elkhorn Creek. The system serves about 1,000 households.

#### **LETCHER WATER AND SEWER DISTRICT**

The Water and Sewer District should start construction in the spring of 2000 on a cluster system to serve 30 homes in the Millstone area.



## **OWSLEY COUNTY**

### Sewer Service in Owsley County

- Estimated 1999 population of 5,300--15% on public sewer
- Estimated 2020 population of 5,550--25% on public sewer
- Proposed projects would connect about 300 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$1,700,000
- Estimated funding needs for public sewer 2006-2020--\$10,000,000

Owsley County had an estimated population of 5,327 (2,170 households) in 1999 with a projected population of 5,550 (2,450 households) in 2020. Public sewer is provided to about 15 percent of the county's residents. About 1,900 households treat wastewater on site. About 300 customers could be added to public sewer service through new line extensions in 2000-2020.

The Booneville Water and Sewer District are the only sewer service providers in the county. Effluent destination is the South Fork of the Kentucky River. They have a new 200,000 gpd capacity plant and are operating at about 60-65 percent of capacity.

## **PERRY COUNTY**

### Sewer Service in Perry County

- Estimated 1999 population of 31,100--30% on public sewer
- Estimated 2020 population of 32,100--45% on public sewer
- Proposed projects would connect about 1,800 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$5,090,000
- Estimated funding needs for public sewer 2006-2020--\$19,260,000

Perry County had an estimated population of 31,102 (11,673 households) in 1999 with a projected population of 32,100 (13,400 households) in 2020. Public sewer is provided to about 30 percent of the county's residents. About 8,200 households treat wastewater on site. About 1,800 customers could be added to public sewer service through new line extensions in 2000-2020.

The City of Vicco and the City of Hazard operate the only two treatment plants in the county, and the Perry County Sanitation District owns collection lines for sewage that is treated at the Hazard facility.

### **VICCO WASTEWATER TREATMENT FACILITY**

The City of Vicco serves about 120 customers. Plant capacity is 100,000 and it is operating near that. Effluent destination is Carr Creek.

### **HAZARD WASTEWATER TREATMENT PLANT**

The Hazard plant has a capacity of 7.5 million gpd and current average daily flow is just under two million gpd. They serve more than 2,700 customers. The effluent destination is The North Fork of the Kentucky River.

### **SANITATION DISTRICT NUMBER ONE**

Sanitation District One owns collection lines in and around Hazard. Their long range plans include not only line extensions, but a plant in the Chavies Area at a cost of about 6 million dollars. This plant would support various line extensions to households and Also serve the Coal Fields Industrial site that the City of Hazard is now serving.

## **WOLFE COUNTY**

### Sewer Service in Wolfe County

- Estimated 1999 population of 7,500--8% on public sewer
- Estimated 2020 population of 8,750--20% on public sewer
- Proposed projects would connect about 200 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$3,100,000
- Estimated funding needs for public sewer 2006-2020--\$0

County had an estimated population of 7,503 (2,960 households) in 1999 with a projected population of 8,750 (3,650 households) in 2020. Public sewer is provided to about 8 percent of the county's residents. About 2,700 of the county's households treat wastewater on site. About 200 customers could be added to public sewer service through new line extensions in 2000-2020.

The Campton Wastewater Treatment Plant is the only provider in the county. The plant has a design capacity of 100,000 gpd, and is currently operating at more than 100 percent of capacity. Effluent destination is Swift Creek. Rates are a \$12.50 minimum.